

```
## Program Name: Estimated Fetal Weight (EFW) Calculator
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## Date: 01/23/2026
```

```
##### Inputs
#####
```

```
# Gestational Age
cat("Please enter Gestational Age\n")
GA= scan(n=1)
if(length(GA)==0){
  cat("Please enter Gestational Age\n")
  GA= scan(n=1)
  if(length(GA)==0){
    cat("If you have your Gestational Age information, please enter
Gestational Age
\nIf you do not have your Please enter Gestational Age, please
hit any button to continue\n")
    GA=scan(n=1)
    if(length(GA)==0){
      GA=40
    }#set default value for GA
  }
}
```

```
## Race
race_index= c("White", "Black", "Hispanic", "Asian")
cat("Please enter # of race\nRace Index: 1-White 2-Black 3-Hispanic 4-
Asian\n")
Race= scan(n=1)
if(length(Race)==0){
  cat("Please enter # of race\nRace Index: 1-White 2-Black 3-Hispanic 4-
Asian\n")
  Race= scan(n=1)
  if(length(Race)==0){
    cat("If you have your race information, please enter # of race
\nIf you do not have your race information, please hit any button
to continue
\nRace Index: 1-White 2-Black 3-Hispanic 4-Asian\n")
    Race= scan(n=1)
    if(length(Race)==0){
      Race=1
    }#set default value for race
  }
}
```

```
## Ultrasonography TypeUltrasonography
ultra_index= c("EFW1", "EFW2", "EFW3", "EFW4", "AC", "BPD", "FL",
"HC", "HUMERUS", "HCAC")
cat("Please enter # of ultrasonography typeUltrasonography
\nUltra Index: 1-EFW1, 2-EFW2, 3-EFW3, 4-EFW4, 5-AC, 6-BPD, 7-FL, 8-
HC, 9-HUMERUS, 10-HCAC\n")
Ultra= scan(n=1)
```

```

if(length(Ultra)==0){
  cat("Please enter # of ultrasonography typeUltrasonography
      \nUltra Index: 1-EFW1, 2-EFW2, 3-EFW3, 4-EFW4, 5-AC, 6-BPD, 7-FL,
      8-HC, 9-HUMERUS, 10-HCAC\n")
  Ultra= scan(n=1)
  if(length(Ultra)==0){
    cat("If you have your Ultra information\nPlease enter # of Ultra
        \nIf you do not have your Ultra information, please hit any
        button to continue
        \nUltra Index: 1-EFW1, 2-EFW2, 3-EFW3, 4-EFW4, 5-AC, 6-BPD, 7-FL,
        8-HC, 9-HUMERUS, 10-HCAC\n")
    Ultra=scan(n=1)
    if(length(Ultra)==0){
      Ultra=1
    }#set default value for Ultra
  }
}

```

```

cat("Please enter value of the ultrasonography\n")
Ultra_value= scan(n=1)
if(length(Ultra_value)==0){
  cat("Please enter value of the ultrasonography\n")
  Ultra_value= scan(n=1)
  if(length(Ultra_value)==0){
    cat("If you have your value of the ultrasonography information,Please
        enter value of the ultrasonography
        \nIf you do not have your Ultra_value information, please find
        your value of ultrasonography and come back later :)")
  }
}
Ultra_value=log(Ultra_value)

```

```

##### call files
#####
# call the parameter estimates file
# call the percentile calculator file
#source("parameter_estimates_0724.R")
PE=c(1.00E+08,1.00E+08,-104831172.1,52832547.06,-
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```

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)
PE= matrix(PE,nrow=40,byrow = T)
index= (Race-1)*10+Ultra;
info= PE[index,]/1e8
fcoef=info[3:9]; sigma=info[10];Sigtab=
matrix(info[11:26],4,4);Zeta=info[27:29];varfixed=
matrix(info[30:78],7,7)

#source("percentile_calculator_0724.R")
i = GA
int <- 1
t1 <- i
t2 <- i**2
t3 <- i**3
tt1 <- (i - Zeta[1])**3 * (i > Zeta[1])
tt2 <- (i - Zeta[2])**3 * (i > Zeta[2])
tt3 <- (i - Zeta[3])**3 * (i > Zeta[3])

Fxx = cbind(int, t1, t2, t3, tt1, tt2, tt3)
Rxx = cbind(int, t1, t2, t3)

mean <- Fxx%%fcoef
#varfixed <- ans$varFix
var <- sigma**2 + Rxx%%Sigtab%%t(Rxx) + Fxx%%varfixed%%t(Fxx)
std <- sqrt(var)
percentile = pnorm(Ultra_value,mean,std)

##### Ourputs
#####
options(digits=3)
cat("percentile is ", 100*percentile,"% ", "(",race_index[Race],"",
",ultra_index[Ultra],":",
exp(Ultra_value),"", "","GA:",GA,"")",sep="")

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